

CLAIMS

We claim:

5 1. A composition comprising an oil-in-water emulsion, said oil-in-water emulsion comprising a discontinuous oil phase distributed in an aqueous phase, a first component comprising an alcohol or glycerol, and a second component comprising a surfactant or a halogen-containing compound.

10 2. The composition of Claim 1, wherein said first component comprises an alcohol.

15 3. The composition of Claim 1, wherein said first component comprises glycerol.

20 4. The composition of Claim 1, wherein said second component comprises a surfactant.

25 5. The composition of Claim 1, wherein said second component comprises a halogen-containing compound.

30 6. The composition of Claim 1, wherein said aqueous phase comprises water.

7. The composition of Claim 1, wherein said aqueous phase comprises phosphate buffered saline.

8. The composition of Claim 1, wherein said oil phase comprises a plant oil.

9. The composition of Claim 8, wherein said plant oil is selected from the group consisting of soybean oil, avocado oil, flaxseed oil, coconut oil, cottonseed oil, squalene oil, olive oil, canola oil, corn oil, rapeseed oil, safflower oil, and sunflower oil.

10. The composition of Claim 1, wherein said oil phase comprises an oil selected from the group consisting of fish oil, flavor oil, water insoluble vitamins, and mineral oil.

11. The composition of Claim 1, wherein said oil phase comprises motor oil.

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12. The composition of Claim 1, wherein said oil phase comprises 30-90 vol% of the oil-in-water emulsion.

10 13. The composition of Claim 1, wherein said oil phase comprises 50-80 vol% of

the oil-in-water emulsion.

14. The composition of Claim 1, wherein said alcohol comprises ethanol.

15. The composition of Claim 1, wherein said surfactant comprises a polysorbate surfactant.

16. The composition of Claim 15, wherein said polysorbate surfactant is selected from the group consisting of TWEEN 20, TWEEN 40, TWEEN 60, and TWEEN 80.

17. The composition of Claim 1, wherein said surfactant comprises a pheoxypolyethoxyethanol.

18. The composition of Claim 17, wherein said pheoxypolyethoxyethanol is selected from the group consisting of TRITON X-100, X-301, X-165, X-102, and X-200.

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19. The composition of Claim 17, wherein said pheoxypolyethoxyethanol comprises TYLOXAPOL.

30 20. The composition of Claim 1, wherein said surfactant comprises sodium dodecyl

sulfate.

21. The composition of Claim 1, wherein said halogen-containing compound comprises cetylpyridinium chloride.

22. The composition of Claim 1, wherein said halogen-containing compound is selected from the group consisting of cetylpyridinium halides, cetyltrimethylammonium halides, cetyltrimethylammonium halides, cetyltrimethylbenzylammonium halides, cetyltributylphosphonium halides, dodecyltrimethylammonium halides, tetradecyltrimethylammonium halides, cetyltrimethylammonium chloride, cetylbenzyldimethylammonium chloride, cetylpyridinium bromide, cetyltrimethylammonium bromide, cetyltrimethylammonium bromide, cetyltrimethylammonium bromide, cetyltributylphosphonium bromide, dodecyltrimethylammonium bromide, and tetradecyltrimethylammonium bromide.

23. The composition of Claim 1, wherein said emulsion further comprises a third component, said third component comprising a surfactant.

24. The composition of Claim 1, wherein said emulsion further comprises a third component, said third component comprising a germination enhancer.

25. The composition of Claim 1, wherein said emulsion further comprises a third component, said third component comprising a phosphate based solvent.

26. The composition of Claim 25, wherein said phosphate based solvent comprises tributyl phosphate.

27. The composition of Claim 1, wherein said emulsion further comprises a third component, said third component selected from the group consisting of a neutramingen, L-alanine, ammonium chloride, trypticase soy broth, yeast extract, L-ascorbic acid, lecithin, p-hydroxybenzoic acid methyl ester, sodium thiosulfate, sodium citrate, inosine, sodium hydroxide, dextrose, and polyethylene glycol.

28. The composition of Claim 1, wherein said first component comprises ethanol and wherein said second component comprises TRITON X-100.

29. The composition of Claim 23, wherein said first component comprises ethanol, 5 said second component comprises cetylpyridinium chloride, and said third component comprises TWEEN-20.

30. A method of making a oil-in-water emulsion comprising emulsifying a mixture, 10 said mixture comprising an oil, an aqueous solution, a first component comprising an alcohol or glycerol, and a second component comprising a surfactant or a halogen-containing compound.

31. The method of Claim 30, wherein said first component comprises an alcohol.

32. The method of Claim 30, wherein said first component comprises glycerol.

33. The method of Claim 30, wherein said second component comprises a 20 surfactant.

34. The method of Claim 30, wherein said second component comprises a halogen-containing compound.

35. The method of Claim 30, wherein said oil is selected from the group consisting 25 of soybean oil, avocado oil, flaxseed oil, coconut oil, cottonseed oil, squalene oil, olive oil, canola oil, corn oil, rapeseed oil, safflower oil, and sunflower oil.

36. The method of Claim 30, wherein said oil is selected from the group consisting 30 of fish oil, flavor oil, water insoluble vitamins, and mineral oil.

37. The method of Claim 30, wherein said oil phase comprises motor oil.

38. The method of Claim 30, wherein said alcohol comprises ethanol.

39. The method of Claim 30, wherein said halogen-containing compound is selected from the group consisting of cetylpyridinium halides, cetyltrimethylammonium halides, cetyltrimethylammonium halides, cetyltrimethylbenzylammonium halides, cetyltributylphosphonium halides, dodecyltrimethylammonium halides, tetradecyltrimethylammonium halides, cetyltrimethylammonium chloride, cetylpyridinium chloride, cetylbenzyldimethylammonium chloride, cetylpyridinium bromide, cetyltrimethylammonium bromide, cetyltrimethylammonium bromide, cetyltributylphosphonium bromide, dodecyltrimethylammonium bromide, and tetradecyltrimethylammonium bromide.

40. The method of Claim 30, wherein said mixture further comprises a third component, said third component comprising a surfactant.

41. The method of Claim 30, wherein said mixture further comprises a third component, said third component comprising a germination enhancer.

42. The method of Claim 30, wherein said mixture further comprises a third component, said third component comprising a phosphate based solvent.

43. The method of Claim 30, wherein said mixture further comprises a third component, said third component selected from the group consisting of a neutramingen, L-alanine, ammonium chloride, trypticase soy broth, yeast extract, L-ascorbic acid, lecithin, p-hydroxybenzoic acid methyl ester, sodium thiosulfate, sodium citrate, inosine, sodium hydroxide, dextrose, and polyethylene glycol.

44. The method of Claim 30, wherein said first component comprises ethanol and wherein said second component comprises TRITON X-100.

45. The method of Claim 42, wherein said first component comprises ethanol, said second component comprises cetylpyridinium chloride, and said third component comprises TWEEN-20.

5 46. A method for protecting or decontaminating an area comprising exposing said area to a composition comprising an oil-in-water emulsion, said oil-in-water emulsion comprising a discontinuous oil phase distributed in an aqueous phase, a first component comprising an alcohol or glycerol, and a second component comprising a surfactant or a halogen-containing compound.

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47. The method of Claim 46, wherein said area comprises a solid surface.

15 48. The method of Claim 46, wherein said solid surface comprises a medical device.

49. The method of Claim 46, wherein said area comprises a solution.

50. The method of Claim 46, wherein said area comprises the surface of an organism.

51. The method of Claim 50, wherein said organism comprises a human.

52. The method of Claim 50, wherein said surface on an organism comprises an external surface of an organism.

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53. The method of Claim 50, wherein said surface of an organism comprises an internal portion of an organism.

54. The method of Claim 46, wherein said area comprises a food product.

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55. The method of modifying an emulsion comprising:

a) providing an oil-in-water emulsion, said oil-in-water emulsion comprising a discontinuous oil phase distributed in an aqueous phase, a first component comprising an alcohol or glycerol, and a second component comprising a surfactant or a halogen-containing compound; and

b) adding or removing a component from said emulsion to produce a modified emulsion.

56. The method of Claim 54, further comprising the step of testing said modified

10 emulsion in a biological assay.

57. The method of Claim 55, wherein said biological assay comprises an antimicrobial assay.

58. The method of Claim 54, further comprising the step of advertising the sale of said modified emulsion.

59. The method of Claim 54, further comprising the step of selling said modified emulsion.

60. A system comprising a delivery system containing an oil-in-water emulsion, said oil-in-water emulsion comprising a discontinuous oil phase distributed in an aqueous phase, a first component comprising an alcohol or glycerol, and a second component comprising a surfactant or a halogen-containing compound.

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61. A system comprising a material in contact with an oil-in-water emulsion, said oil-in-water emulsion comprising a discontinuous oil phase distributed in an aqueous phase, a first component comprising an alcohol or glycerol, and a second component comprising a surfactant or a halogen-containing compound.

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62. The system of Claim 61, wherein said material comprises a medical device.

63. The system of Claim 61, wherein said material comprises a solution.

5 64. The system of Claim 63, wherein said solution comprises a food product.

65. The system of Claim 63, wherein said solution comprises a cleaning product.

66. The system of Claim 63, wherein said solution comprises a motor oil.

10 67. The method of Claim 61, wherein said material comprises biological material.

68. The method of Claim 61, wherein said biological material comprises human
45 tissue.

69. The method of Claim 61, wherein said material comprises a food product.

70. The method of Claim 61, wherein said material comprises a cream.